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Women in the Fire Service: Investigating the Influence of Conformity to Masculine Gender Role Norms and Perceived Social Support on Trauma Symptomology

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by

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Dedication

This dissertation is dedicated to my parents, Roger and Dottie.

I bloom thanks to the care of my gardeners.

Thank you for believing in me through it all.

I love you both so much.

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As I come to this landmark in my education and career, I feel overwhelming gratefulness for the countless people who have influenced and supported me. First and foremost, I am forever thankful for my parents, Roger and Dottie, who provided me with endless opportunities, guidance, and love. I also owe a thank you to my brother, Adam, who allowed me to use his home as my writing retreat. I would like to thank the faculty of the University of Texas at Austin for giving me the opportunity to pursue my dreams. Drs. Michael Parent, Jana Tran, Tiffany Whittaker, and Germine Awad, thank you for serving as my dissertation committee members, for supporting me, and for being so patient in the process. Thank you also to the various members of Division 51 who have been incredibly welcoming and informative. A special thank you is owed to Dr. Sam Buser, who created opportunities for me which led to this dissertation. Similarly, I would like to thank Dr. Gary Brooks, who instilled my early interest in research on masculinities. I would also like to thank the staff of the Texas Tech Student Counseling Center, who guided me during my internship year. I would be lucky to ever find a more supportive and collaborative work environment. Finally, I want to thank the friends who have supported me along this journey. Dee, I could not ask for a better friend. Thank you for being there for me in every way. I am so grateful to have you in my life. To the infamous Glitterati, thank you for bringing all the sparkle into my life. Cynthia, thank you for keeping an eye out for trip hazards, and helping me pick myself up when I go straight for them anyway.

Thank you all from the bottom of my heart.

Abstract

Women in the Fire Service: Investigating the Influence of Conformity to Masculine Gender Role Norms and Perceived Social Support on Trauma Symptomology

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Research on masculinity has typically paid little attention to how masculine gender socialization affects women. Gender socialization is particularly important to understand within highly-masculinized occupations, such as the fire service, in which women are subjected to frequent negative experiences such as coworker hostility, the silent treatment, close and punitive supervision, and sexual harassment. These negative experiences may lead to a reduction in female firefighter's perceived levels of social support. The stress-buffering model of social support highlights the critical role perceptions of social support play in an individual's appraisal of their ability to cope with stressors and subsequent use of coping skills. It is crucial to understand variables that influence female firefighter's perceptions of social support and its relationship to trauma symptomology. Masculine gender role conformity of female firefighters is likely to influence interactions within the male-dominated environment, resulting in relationships between masculine gender

conformity and perceived social support at work. This study explored the relationship between conformity to masculine norms (CMN) and trauma symptom severity (TSS), as assessed by the Conformity to Masculine Norms Inventory – 46 (CMNI-46) and PTSD Civilian Checklist – 5 (PCL-5) respectively, and further sought to investigate whether the association between CMN and TSS is mediated by perceived social support (PSS). This study also investigated CMN amongst female firefighters in comparison to that of normative data samples of women. Data were collected through self-report questionnaires distributed to all active-duty female firefighters employed by two large municipal fire departments in the Southwestern region of the United States. The mediated model was assessed using the PROCESS macro by Hayes (2013) and indicated support for the overall model (β = -.132, *SE* = .061, CI = -.266, -.026), and the significant indirect effect (*b* = -0.132) indicated that PSS mediated the relationship between CMN and TSS. Results from the CMNI-46 indicated significant differences in CMN between this sample of female firefighters and samples of women from previous studies. These findings indicate conformity to gender roles has significant indirect effects on the health of women in the fire department and highlight the importance of social support for the wellbeing of female firefighters.

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Chapter One: Introduction

Firefighting is a high-risk career in which individuals may be frequently and repeatedly exposed to horrific scenes as well as life-or-death situations. Day-to-day activities in this occupation include stressful and potentially traumatic situations such as suppressing fires, providing medical care, engaging in crowd control, recovering bodies, and directing rescue efforts (Del Ben, Scotti, Chen, & Fortson, 2006). These experiences, which firefighters typically refer to as critical incidences (CIs), have been shown to place firefighters at increased risk for development of posttraumatic stress disorder (PTSD) symptoms. The prevalence of PTSD in firefighters is estimated at between 6.5-37% (Bryant & Harvey, 1995; Haslam & Mallon, 2003). Firefighters are also at greater risk for depression than the general population (Wagner, Heinrichs, & Ehlert, 1998), and depression is frequently comorbid with PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Due to the elevated risk for trauma exposure and the development of PTSD and depressive symptoms in this population, understanding risk and protective factors for firefighter mental health is important to preserve the mental and behavioral health of individuals who choose a career in this important field.

Firefighting has historically been a male-dominated occupation; women[1] comprise only 4% of career firefighters in the United States (Evarts & Stein, 2019). In the absence of women, the institutional environment of firefighting has developed to support tenets of traditional masculinity (Ainsworth, Batty, & Burchielli, 2014; Cooper, 1995; Greenberg, 1998; Hall, Hockey, & Robinson, 2007; Pacholok, 2009; Simpson, 1996; Tracy & Scott, 2006; Yarnal, Dowler &

[1] Throughout this dissertation, the reader will find the terms "women" and "female" used frequently. "Women" will be utilized as a noun (i.e. Women indicate…), whereas "female" will be utilized as an adjective (i.e. Female firefighters report…).

Hutchinson, 2004). The introduction of women into male-dominated occupations can challenge the existing "maleness" of the environment and hegemonic masculinity, resulting in gender threats (Craig & Jacobs, 1985). Heightened gender anxiety, due in part to the precarious nature of masculinity achievement, may cause men to overestimate or be hypervigilant for these gender threats (Bosson, Taylor, & Prewitt-Freilino, 2006). When faced with perceived gender threats, men are motivated to increase traditionally masculine behaviors, such as aggression, in order to reestablish masculinity and reduce distress and gender-related anxiety (Jakupcak, 2003; Jakupcak, Lisak, & Roemer, 2002; O'Neil, 2008; Vandello and Bosson, 2013).

Masculinity-affirming behaviors may come at a high-cost to female employees in high-risk, male dominated fields. Research suggests women in police departments, of which officers are 87.5% men nationally (United States Department of Justice, 2018), face frequent gender-related prejudices, stereotyping, discrimination, and harassment from both peers and supervisors (Brown & Grovel, 1998; Franklin, 2005; Hassell & Brandl, 2009; Haarr & Morash, 2013; Morash, Haarr, & Kwak, 2006; Rabe-Hemp, 2008, 2009; Seklecki & Paynich, 2007). Women in the military, of which officers are 81.6% men nationally (Office of the Under Secretary of Defense, Personnel, and Readiness, 2018), also report experiencing gender discrimination, sexual harassment and assault, negative attitudes from their peers, reduced feelings of acceptance, and social isolation (DeFleur & Gillman, 1978; Lehavot & Simpson, 2014; Priest, Prince, & Vitters, 1978; Prince, Vitters, and Priest, 1978).

While literature specifically related to women in the fire department is scarce, existing research has indicated that female firefighters also report frequent negative experiences due to gender. These experiences include insufficient instruction, coworker hostility, the silent treatment, close and punitive supervision, lack of support, sexual harassment, stereotyping, negative attitudes

from male peers, lack of acceptance, and differential treatment (Floren, 1980; Floren, 1981; Rosell, Miller & Barber, 1995; Yoder & Berendsen, 2001). These women also report marginally more pressure to conform within the fire company than their male peers report (Craig & Jacobs, 1985).

Research consistently shows that social support is a prominent protective factor for mental health. Yet, social support and a sense of belonging may be difficult for female firefighters to achieve, due in part to the male-dominated institutional environment (Brewin, Andrews, & Valentine, 2000; Cockshaw, Shochet, & Obst, 2012; Greene & del Carmen, 2002; Lehavot & Simpson, 2014; Yoder & Berendsen, 2001). According to stress-buffering model of social support, (covered in further detail in literature review), social support is directly related to wellbeing for persons under stress (Ducharme & Martin, 2000). Social support intervenes between the stressful event and the appraisal of the event by improving an individual's sense of their ability to cope successfully with the stressor and decreasing both the physiological and psychological stress reactions (House, 1981). According to this model, social support does not necessarily need to be utilized to be effective in maintaining mental health, but it must be perceived as available. For this reason, the perception of social support was assessed in the current study, rather than utilization of social support or specific coping skills.

Individual differences in gender role conformity may be related to the perception of social support within the fire department. As the fire department is a highly-masculinized environment, women who report more conformity more to traditional masculine norms, such as risk-taking and emotional control (Mahalik, Perry, Coonerty-Femiano, Catraio, & Land, 2006), may function as less of a gender threat to men in the fire department. If this were true, higher masculinity conforming women may perceive significantly more workplace social support than their lower masculinity conforming peers. Greater perceived social support in the workplace may thus serve

a protective role for high masculinity-conforming women, leading to more social support and a reduction in the presence of trauma symptoms.

The purpose of the current study is to explore masculine gender role conformity, social support, depression symptoms, and trauma symptoms amongst female firefighters. As reviewed in Chapter Two, research on trauma reactions and PTSD has consistently identified social support as a protective factor (Brewen, Andrews, & Valentine, 2000). Feeling a sense of belonging and support has been suggested to protect against or minimize trauma reactions in a variety of settings and in response to diverse trauma experiences (Tuckey & Hayward, 2011). Unfortunately, previously reviewed research suggests these same protective factors may be difficult for female firefighters to establish within their gendered environment. This study aims to investigate perceived social support as a protective factor for the specific high-risk population of female firefighters. In addition, this research will explore the influence of masculine gender role conformity on perceptions of social support, and consequently trauma symptom severity. This study also investigated masculine gender role conformity amongst female firefighters in comparison to women in normative data samples. Gender role conformity affects vocational decision-making (Mahalik et al., 2006) and more masculine-conforming women may be more likely to pursue employment in the fire service.

HYPOTHESES

There are two primary objectives to this study. The first objective is to explore the relationships between conformity to masculine gender role norms, trauma symptom severity, depressive symptoms and perceived social support. As previously stated, women who report more conformity to masculine norms may pose less of a gender role threat to male peers. This study predicts that, among women, conformity to masculine norms will be positively associated with

perceived social support in the workplace. Due to the established protective role of social support in the development of trauma symptoms, social support is predicted to have a negative relationship with trauma symptom severity. Perceived social support is predicted to mediate the relationship between conformity to masculine gender role norms and trauma symptom severity. These relationships are represented by Hypotheses 1. The hypothesized model is represented in Figure 1 below. Due to high comorbidity of depression and PTSD (Kessler et al., 1995), high rates of depressive symptoms within firefighter populations (Wagner, Heinrichs, & Ehlert, 1998), the established role of social support in predicting both depression and trauma symptoms (Regehr, Hill, Knott, & Sault, 2003), and negative associations between mental health overall and conformity to masculine norms (Wong, Ho, Wang, & Miller, 2017), depressive symptoms (DS) was added as a covariate during follow-up analysis.

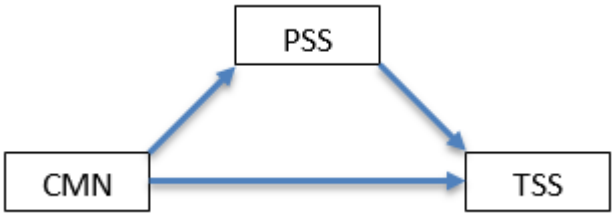

Figure 1. Hypothesized mediated model. CMN = conformity to masculine norms, PSS = perceived social support, and TSS = trauma symptom severity.

Research Objective 1: Explore the relationships between conformity to masculine gender role norms, trauma symptom severity, and perceived social support.

Hypothesis 1: There is a significant indirect relationship between CMN and TSS via PSS.

The second objective of the study is to explore the masculine gender role conformity of female firefighters in comparison to that of women included in normative data samples. As noted previously, the fire service attracts men who report higher conformity to more traditional

masculine norms than the general population (Mahalik, et al., 2006). This study hypothesizes that female firefighters share this pattern and will conform more to masculine norms when compared to other samples of women. This hypothesis will be explored by comparing data from the proposed study with that from two previous studies analyzing the use of the CMNI with women.

Research Objective 2: Explore the masculine gender role conformity of female firefighters in comparison to that of women included in normative data samples.

Hypothesis 2: Female firefighters will show significantly more conformity to masculine norms than women in normative data samples (Parent & Smiler, 2013; Smiler, 2006).

Chapter Two: Integrative Analysis of Literature

Firefighters are frequently exposed to traumatic events through the tenure of their employment. These experiences are fodder for the development of PTSD symptoms. This study aims to explore variables related to the development of PTSD in female firefighters, with a particular focus on perceived social support and masculine gender role conformity. Accordingly, this literature analysis will first review the nature of trauma reactions, including relevant theory, risk factors and protective factors. This will be followed by an exploration of PTSD symptomatology within female fighters and women in other high-risk, male-dominated occupations. The review will further explore how gender roles and gender role conformity may influence the experiences of female firefighters. It is these gendered experiences that shape female firefighters' perceptions of social support, one of the main preventative factors in the development of trauma symptoms.

FIREFIGHTING, TRAUMA, AND DEPRESSION

Firefighting is a high-risk career where individuals may frequently and repeatedly be exposed to horrific scenes as well as life-or-death situations. Their day-to-day activities include stressful and potentially traumatic situations such as suppressing fires, providing medical care, engaging in crowd control, recovering bodies, and directing rescue efforts (Del Ben, Scotti, Chen, & Fortson, 2006). In one study, 29.6% of firefighters reported three or more traumatic events over their lifetimes (Meyer et al., 2012). These experiences, which firefighters typically refer to as critical incidences (CIs), put them at increased-risk for the development of trauma-related symptoms.

The existing research on prevalence of posttraumatic stress disorder (PTSD) in firefighters places prevalence between 6.5% and 37% (Bryant & Harvey, 1995; Haslam & Mallon, 2003). This discrepancy in prevalence is likely the result of variations in sample size, research participants (i.e. volunteer firefighters vs. professional firefighters), and measures of PTSD. Del Ben et al. (2006) used the Posttraumatic Stress Disorder Checklist – Civilian Version (PCL-C; Weathers, Litz, Huska, & Keane, 1994) for their research on predictors of PTSD in both paid and volunteer firefighters. The PCL uses the *Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition* (DSM-IV-TR) guidelines to measure PTSD symptoms according to full diagnostic criteria, which is a clear advantage over the Impact of Events Scale (IES), which was used in previous research and was created before PTSD became a diagnosis. Del Ben et al. (2006) found a PTSD diagnostic prevalence rate of 5-6% in firefighters, although the prevalence of PTSD symptoms was much higher (about 22%). More recent research (Pao & Tran, 2017) cited a PTSD prevalence rate of 12.6% within a sample of firefighters. The authors point out that this rate is comparable to military samples and significantly higher than civilian samples (Pao & Tran, 2017). Experiences of PTSD may be difficult to understand within populations of firefighters, as many firefighters, especially male firefighters, also have previous military and/or warzone experience. In research conducted by Meyer et al. (2012), the most common category of trauma endorsed by participants was combat or warzone experiences (20.6%).

In addition to trauma symptoms, firefighters also incur higher rates of depressive symptoms than the general population. The prevalence rates for depression among firefighters are approximately 39.7% (Wagner, Heinrichs, & Ehlert, 1998), or about four times higher than the prevalence of depression within the general population (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). Depression has been found to have a significant positive relationship with

PTSD, indicating that firefighters with depression are more likely to have PTSD (Psarros et al. 2018). A longitudinal study over 20 years, investigating comorbidity of anxiety, PTSD, and depression amongst military veterans, offers more information about the directionality of the relationship between PTSD and depression (Ginzburg, Ein-Dor, & Solomon, 2010). The authors found that PTSD significantly predicted anxiety, depression, and comorbidity. The authors concluded that PTSD is the dominant disorder following traumatic experiences and influences the development of depressive and anxious disorders. This study's results also indicate that PTSD occurs more frequently as a comorbid disorder with both depression and anxiety than it occurs in isolation. This finding is supported by epidemiological research indicated that amongst individuals with PTSD, about half also meet criteria for major depressive disorder (Kessler et al., 1995).

Research looking specifically at predictors of PTSD among firefighters has shown that occupational stress appears critically important (Armstrong, Shakespeare-Finch, & Shochet, 2014; Meyer et al., 2012) and that PTSD can possibly be buffered by a sense of belonging, support, and respect from the organization. A sense of belonging in the workplace has also been associated with lower depression and anxiety in self-reports (Cockshaw et al., 2012) and has been identified at a protective factor against both burnout and PTSD in firefighters (Tuckey & Hayward, 2011). Firefighters who experience feelings of alienation from others are more likely to exhibit posttraumatic stress symptoms, as well as symptoms of depression, after a critical incident (Regehr, Hill, & Glancy, 2000). Social support has been found to be a stronger predictor of both depression and traumatic stress symptoms amongst firefighters regardless of trauma exposure or level of experience (Regehr et al., 2003). Sadly, the authors note that perceptions of social support amongst firefighters decrease over time, as more experienced firefighters reported less social support than new recruits.

Negative social interactions, which indicate problematic relationships and likely a lack of support from those relationships, are also a risk factor for the development of PTSD. Farnsworth and Sewell (2011) found that negative social interactions predicted PTSD symptoms above and beyond social support, previous trauma experiences, and demographic variables. This supports previous findings on the risks of negative social interactions for trauma-related symptoms (Borja, Callahan, & Long, 2006; Davis, Brickman, & Baker, 1991; Ullman & Fillipis, 2001).

Theoretical frameworks have helped explain the relationship between social support and trauma symptoms. Social causation models of stress, such as that of Calhoun and Tedeschi (2013), reason that the protective role of social support is likely due to deliberate rumination. Potentially problematic assumptions, such as perceived guilt or negative cognitions about the self and the world, are challenged through social support (Robinaugh et al., 2011; Shallcross, Arbisi, Polusny, Kramer, & Erbes, 2016). According to the social-cognitive processing model, social support acts to promote cognitive processing of a trauma, whereas social rejection or negative responses to traumatic experiences discourages talking about the trauma and leads to cognitive avoidance and suppression (Lepore, 2001, Wang & Gan, 2011).

Appraisal-based models of stress, such as the stress-buffering hypothesis, focus on the perception, rather than utilization, of social support. This focus on perception is warranted as research suggests that perception of social support is more related to psychological outcomes than objective measures of social support (Solomon, Mikulincer, & Hobfoll, 1987). Synder and Pulvers (2001) developed an appraisal-based framework for understanding how individuals cope after trauma. The researchers identified a primary process where the affected individual forms an appraisal of the traumatic event, and a secondary process in which the individual assesses the resources he or she possesses in order to manage the event.

The appraisal of the event by the individual helps to determine the coping strategies enacted (Littleton, Axsom, & Grills-Taquechel, 2011). When an individual assesses adequate resources, he or she is more likely to engage in active or approach strategies. Approach strategies involve focusing on the stressor or the immediate reactions to the stressors, such as support seeking or making plans to resolve the stressor. In contrast, when one determines that their resources are not sufficient to cope with a traumatic incident, he or she is more likely to engage in reactive or avoidance strategies. Avoidance strategies involve avoiding the stressor and reactions to it, and may include social withdrawal, denial of the stressor, and disengagement or denial of one's thoughts or emotional reactions. Avoidance coping strategies hinder healing after trauma, and may reinforce development of trauma symptoms (Littleton, Horsley, John, & Nelson, 2007; Littleton et al, 2011). Avoidance strategies are built into the conceptualization of PTSD and make up one of the four symptom clusters as defined by the DSM-V (American Psychiatric Association, 2013).

The above theories have particular relevance to the goals and related hypotheses of the current study. If female firefighters do not perceive adequate resources for coping, especially in terms of social support available, they may face increased risk for the development of trauma symptoms after a traumatic experience. This relationship calls for a further understanding of the context of female firefighter's experiences and the resources available to them, or barriers to potential resources.

THE FIRE SERVICE

Historically, firefighting has been a male-dominated occupation. Men-only clubs dedicated to responding to fires, which predate the formal fire service, developed in the early 1700s. In 1736, Benjamin Franklin started his own club, which he described in his newspaper as, "a club or society of active *men* [emphasis added] belonging to each fire engine, whose business is to attend to all

fires with it whenever they happen" (Lemay, 2006). To this day, the fire service is often referred to as a brotherhood.

Women became involved in firefighting later and mostly in volunteer positions in all-female brigades, although the first African American female volunteer firefighter, Molly Williams, was a slave (Floren, 2007). Women also played an integral role in fighting forest fires and filling the positions male firefighter left behind during World War II. By the 1970s gender-segregated companies had begun to be phased out and volunteer female firefighters were fairly common. It was not until 1974 that a woman, Judith Livers, became the first paid female firefighter in the U.S., and in the world (Craig & Jacobs, 1985). As of 2017, women made up 4% of career firefighters and 9% of volunteer firefighters in the United States (Evarts & Stein, 2019).

In general, firefighting is culturally accepted as a traditionally masculine occupation. The career is often associated with variants of masculinity including the valuing of control over nature, rationality, physical dominance, manual labor, and competition (Cooper, 1995; Greenberg, 1998; Hall, Hockey, & Robinson, 2007; Pacholok, 2009; Simpson, 1996; Tracy & Scott, 2006; Yarnal, Dowler, & Hutchinson, 2004). Firefighting is also looked upon favorably by both children and adults and has been associated with masculine heterosexuality and heroism. Research on male firefighters indicates that they are aware of their sex symbol status and that they use this in displays of sexuality, both with each other (i.e. sexual horseplay) and with the public (Tracy & Scott, 2006). The concept of masculine heroism, which is also strongly present in military organizations, leads to "boisterous male sociability" and bonding (Hall et al., 2007, p. 541) and can create a locker room environment. It is this heroic, macho, physical work that may lead male firefighters to separate themselves from women in general and men in occupations viewed as less traditionally

masculine. Firefighting, as an institution, provides an environment and resources that leads to construction of gendered identities that match cultural ideals (Ainsworth et al., 2014).

Notably, firefighter's responsibilities and work environments are rapidly changing. The occupation now includes more culturally feminized tasks like social outreach, administration, and prevention. Fighting fires is only a small component of the occupation; in 2013, only 4% of fire department responses were to actual fires (Fire Analysis & Research Division, 2012). Yet, firefighters may hold tight to the culture that has developed in the fire department. The previously held construction of masculinity, and the environment that has developed within the fire department, can be threatened or challenged by the introduction of women colleagues. This is especially true if the introduction of women threatens the maleness of the environment or if women are competent in the tasks previously deemed to support the confirmation of masculinity (Craig and Jacobs, 1895; Prokos & Padavic, 2002).

In addition, firefighting as a career attracts men who report conforming more to traditional masculine norms (Mahalik, et al., 2006), and the more traditional a man is, the lower his evaluation of female firefighters tends to be (Craig & Jacobs, 1985). Female firefighters, on the other hand, tend to be less traditional than their male peers, and therefore may feel more comfortable engaging in traditionally masculine activities (Craig & Jacobs, 1985).

MASCULINITIES

"Masculinity is not something given to you, but something you gain."

-Norman Mailer (1979)

Avoidance of femininity through distancing and deidentification is a long-standing tenet of masculinity (Blazina, 1997; Greenson, 1968; Kierski & Blazina, 2009; Norton, 1997). From the

early history of psychology, Freud (1937) defined normal masculine development as separation from the mother and her feminine qualities. In 1976, David and Brannon outlined four rules for establishing masculinity: Their first rule, "no sissy stuff" prescribes the avoidance of anything vaguely feminine (Levine, 1998). Levant, Hirsch, Celentano, and Cozza (1992) identified avoidance of femininity as one of seven principles defining traditional American masculinity. Hegemonic masculinity, defined as "a pattern of practice… that allowed men's dominance over women to continue" and maintain a "gendered order," elucidates both the power and relational aspects of masculinity (Connell & Messerschmidt, 2005, p. 832). Hegemonic masculinity is comprised of a hierarchy of multiple masculinities and femininities, which operate in specific contexts.

Hegemonic masculinity highlights that gender is accomplished through social, context-specific practices (Ainsworth et al., 2014; West & Zimmerman, 1987) to maintain an order, with masculinity privileged and valued over femininity. It is the social context that allows gender to be maintained and/or challenged through everyday interactions with others, resulting in material and physical consequences for both men and women (Britton, 2000; Hall, 1993; Poggio, 2006; West & Zimmerman, 1987). Consequently, actions that serve to increase dominance over and distance from women can be conceptualized as behaviors which confirm masculinity.

The precarious nature of masculinity, sometimes referred to as manhood, is prevalent in both research and popular culture. The precarious manhood thesis, as developed by Vandello and Bosson (2013), consists of three tenets: 1) manhood is elusive, 2) manhood is tenuous, and 3) manhood requires action and public proof. These important components of "manhood" and their evidence are described further below.

The research conducted by Vandello et al. (2008) showed the tenuous nature of masculinity. Research participants, who were college students, were asked to identify the meaning of ambiguous statements concerning lost manhood or womanhood, such as "I used to be a man. Now I am no longer a man." The participants were able to provide more reasons for, and reported that it was easier to interpret, the loss of manhood than the loss of womanhood. The reasons that they provided for men were more strongly associated with social factors than physical factors, whereas the reverse was true for their interpretations of lost womanhood. The social component of the loss of manhood lends support for both the tenuous and relational nature of masculinity.

Vandello and Bosson's (2013) third tenet of masculinity, the requirement of action and public proof, is a result of the social, versus biological, construction of masculinity. The precarious nature of masculinity requires continuous and repetitive displays of masculine behavior, particularly stereotypically masculine behaviors, and confirmations to be maintained (Barrett, 1996; Kimmel, 1997; Monaghon, 2002; Pacholok, 2009; Tosh, 1994). Weaver, Vandello, Bosson, and Burnaford (2010) tested the action component of this tenet and found that open-ended sentences describing "a real man" resulted in participants supplying more action terms, whereas "a real woman" was described with more trait terms. In their research, women ascribed trait and action terms to men and woman equally. The difference occurred in how men described "a real man," meaning that the requirements or pressures of masculinity achievement are more salient to men than to women. Men may overestimate or distort expectations regarding their masculinity, causing them to be hypervigilant to gender threats and more likely to engage in public displays of masculinity (Bosson et al., 2006; Kimmel, 1997; Vandello, Cohen, & Ransom, 2008; Vandello, Ransom, Hettinger, & Askew, 2009).

The precariousness and instability of masculinity can lead to significant anxiety, which men would be highly motivated to reduce. Vandello and Bosson (2013) identified the anxiety associated with the structure of masculinity as one of its only enduring characteristics, rather than any specific tenets of masculinity. Even as the specificities of masculinity change and vary over time, the impermanence of masculinity achievement and the need to prove one's masculinity remains constant (Kimmel, 2006; Pleck 1976). Many other researchers have noted the anxiety-provoking nature of the quest to achieve masculinity, what Pleck (1981, p.20) describes as a "risky, failure-prone process" (Eisler & Skidmore, 1987; Herek, 1986; Kimmel, 1997, 2006; Levant, 1996; O'Neil, Helms, Gable, David, & Wrightsman, 1986; Pleck, 1995). It is this continuous state of needing to prove one's masculinity that causes men to feel more anxiety than women about their gender status (Vandello & Bosson, 2013). O'Neil (2008, p. 362) referred to this anxiety as gender role conflict, defined as the "psychological state in which socialized gender roles have negative consequences for the person or others." This definition is important as it draws attention to the fact that there can be negative consequences for others as a result of an individual's gender role conflict.

Public displays of masculinity have been identified as not only a way to establish masculinity, but also as a method of repairing or bolstering masculinity after it has been challenged or threatened (Kimmel & Mahler, 2003; Malamuth, Linz, Heavey, Barnes, & Acker, 1995). This is evident in research findings suggesting that men show an increase in aggressive or risky behaviors after a gender threat (Bosson et al., 2009; Vandello, Bosson, et al., 2008). For example, college-aged men who score high on gender role conflict, as measured by the Masculine Gender Role Stress Scale (MGRSS; Eisler & Skidmore, 1987), a commonly used measure highly correlated with other masculinity indices, self-report higher levels of aggression and violence towards others (Jakupcak, 2003; Jakupcak, Lisak, & Roemer, 2002). Gender role stress is also

predictive of men's aggression in response to gay men (Parrott, 2009) and verbal and physical partner abuse among substance-abusing men (Copenhaver, Lash, & Eisler, 2000).

Research indicates that when masculinities are challenged or threatened, practices and displays of masculinity may become more intense, frequent, and visible (Morgan, 1992). This could include, among other behaviors, acts of aggression or behaviors designed to reassert dominance over and avoidance of women. Additionally, a woman's presence may be used to draw attention to and accentuate the differences between masculinity and femininity, to reestablish the gendered order (Prokos & Padavic, 2002). It is these attempts to reestablish or bolster masculinity that can become problematic for female firefighters.

Masculinities and Mental Health

Conformity to masculine gender norms is associated with negative mental health, negative social functioning, and resistance to psychological help seeking (Wong et. al, 2017). Although conformity to masculine norms is often framed as problematic, it appears that some norms have more of an impact on functioning and well-being than other norms, and some norms may have direct and indirect benefits as well as costs. Conformity to masculine norms and masculine gender role stress are both significantly and positively related to PTSD symptomology, with gender norms of emotional inexpressiveness potentially having the most impact on emotional processing required for recovery from trauma (Morrison, 2012). It is important to note that this research has primarily focused on the gender conformity of men, rather than women. For women, especially women in male-dominated fields, masculine gender role conformity may have different effects on health and relationships due to the interpersonal nature of the gender norms. The current study will allow for a deeper understanding of the interpersonal associations of masculine gender role conformity for women.

WOMEN IN MALE-DOMINATED FIELDS

"On certain social occasions, otherwise dignified and serious men will begin behaving unconsciously like players on a stage, performing as they talk, acting as they gesticulate. The cause is invariably a woman."

— *Jed Rubenfeld, The Interpretation of Murder*

Existing research on women in male-dominated fields has explored a variety of occupations. The literature tends to focus on personality or demographic characteristics that led to women entering these fields, rather than the gendered experience or psychological consequences of working in a male-dominated environment (Lemkau, 1983). The studies that investigate negative outcomes for women, such as research conducted by Smith, Lewis, Hawthorne, and Hodges (2013), typically focus on careers that do not inherently place employees at higher risk for traumatic experiences. Because employment as a firefighter increases the risk that an individual will experience a traumatic situation, the overview below will also include two highly-masculinized occupations that also increase the risk for trauma exposure.

Women in the Fire Service

Constructing gender

Research on women's constructions of gender in the fire service, conducted by Ainsworth et al., (2014), indicated female firefighters are acutely aware of gendered processes occurring around them. The study participants constructed multiple versions of masculinity and femininity and highlighted the interpersonal consequences associated with each version of gender performance. Problematic masculinity was described as consisting of heightened displays of masculinity as well as rejection of any feminine traits or behaviors. This type of masculinity is

associated with increases in sexual horseplay or boisterous male sociability mentioned previously and can result in teasing and marginalization of women for anything considered feminine, such as showing emotion or objecting to the masculine behaviors. This enactment of masculinity leads to a "locker room" type environment, characterized by practices associated with "male power, identity, masculinities, competition, solidarity, and adolescent behavior" (Gregory, 2009, pp. 326-327). The increased displays of masculinity were also associated with practices such as intimidation, threats, sexual objectification, and displays of pornographic material (Ainsworth et al., 2014). These behaviors can be conceptualized as reactions to the presence of women, who served as a gender threat.

The female firefighters in the study also identified a preferred femininity, which accentuated the value of emotional intelligence (Ainsworth et al., 2014). This preferred femininity is an example of how individuals may try to redefine the gendered nature of an occupation to emphasize gender-aligned aspects and undermine other gendered characteristics of employment. They reported that their ability to recognize feelings in themselves and others made them better able to provide emotional support on-scene. By constructing femininity in this way, female firefighters can highlight the gender-congruent aspects of their occupation such as empathy and caring for others. Preferred femininity was also associated with the value of being professional and maintaining a professional work environment. This preferred femininity stands in direct contrast with the behaviors exhibited in the problematic masculinity construction and was aligned with a less threatening "familial" type of masculinity.

The firefighters also identified two potentially problematic constructions of femininity in this workplace environment: feminist femininity and bitchy femininity (Ainsworth et al., 2014). Feminist femininity was described as problematic as it risks highlighting gendered differences and

making their token status more visible. Interestingly, the participants did not express this concern with the preferred femininity. One research participant compared those adhering to the feminist construction of femininity to the "male chest beaters" described in the construct of problematic masculinity. "Bitchy" femininity was constructed as a competitive, stress-inducing collection of behaviors that created conflict between women.

The constructions that the firefighters create are rewarded and punished by their peers, highlighting the real consequences of gender and the relational nature. For example, when women in Ainsworth, Batty and Burchielli's (2014) study confronted men about practices associated with problematic masculinity, they experienced negative consequences such as teasing or isolation, thereby maintaining hegemonic masculinity and the gendered order. When women confront men about their behaviors, it may be perceived as a challenge to their masculinity and further exacerbate the situation by causing an increase in the behaviors associated with "problematic masculinity."

Obstacles and challenges in the fire department

Floren (1980, 1981) found that the two most cited obstacles to successful performance in firefighting as reported by women were negative attitudes of men and lack of acceptance. Craig and Jacob's (1985) explanatory factors for women's military experiences could also apply to processes occurring in the fire department. For example, female firefighters are often assigned gender-congruent responsibilities within a competitive environment where they often feel they must prove themselves. The fire service is also a traditionally masculine field where the presence of women can be considered disruptive as both changes in policy (i.e. sexual harassment guidelines) and physical environment (construction or designation of separate sleeping quarters, showers, etc.) are enacted. It is this disruption that male colleagues react to by rejecting the women and/or increasing gender-affirming behaviors.

Negative attitudes and lack of acceptance from male peers and supervisors cause female firefighters to be subjected to a range of processes that impede both belongingness and work success. These processes include insufficient instruction, coworker hostility, the silent treatment, close and punitive supervision, lack of support, stereotyping, and differential treatment (Yoder & Berendsen, 2001). Insufficient instruction leaves the women in the precarious situation of needing to ask for more information or help, which goes against masculine values and leaves the women open to ridicule. In addition, some coworkers may be openly hostile, which could include threats or statements that the woman doesn't belong there or will never make it as a firefighter. These experiences were frequently reported by women in Yoder and Berendsen's (2001) research. Over 70% of the female firefighters reported instances of overt hostility, such as one woman's experience with an instructor on her first day of training: "This [instructor]… put a finger in my face and said, 'You will never [expletive] pass this course- women are not needed to be doing this.'" (Yoder & Berendsen, 2001)

Female firefighters have reported that the silent treatment can occur when men fear doing or saying anything that could be construed as sexual harassment (Yoder & Berendsen, 2001). As a result, the men ignore the woman completely, refusing to engage with her or dramatically changing behaviors in her presence. In the National Report Card on Women in Firefighting (Hulett, Bendick, Thomas, & Moccio, 2008), 50.8% of women indicated that they had experienced isolation or shunning due to their gender.

As women comprise a small percentage of career firefighters, their token status likely results in heightened visibility. Unfortunately, this heightened visibility may put them in the position of representing all female firefighters, rather than standing alone as an individual and judged accordingly. This increased pressure may factor into why many women who are firefighters

report feeling the need to prove themselves throughout their careers (Yoder & Berendsen, 2001). The burden to constantly prove oneself may generate feelings of lack of acceptance and support and an increase in work-related stress as the women report having to outperform male peers just to be considered competent. Additionally, attempts to prove one's skills and competence can be thwarted by division assignments based on gender stereotypes (Craig & Jacobs, 1985).

The constant need to prove oneself may affect women's sense of self-efficacy. As female firefighters face increased pressures to prove their worth in the fire department, they may find themselves in company with others who believe, and potentially openly express, that women cannot become competent firefighters. The doubt projected by others is likely to exacerbate difficulty in establishing a sense of self-efficacy as a firefighter, and anti-woman sentiments may become internalized or heightened. In research specifically investigating the experiences of firefighters, self-efficacy is significantly related to both trauma and depression symptoms (Regehr et al., 2000).

The importance of self-efficacy in the face of trauma has also been documented in military populations. In a large study of over 20,000 Air Force personnel investigating gender differences in mental health post-deployment, women reported lower levels of unit cohesion and self-efficacy than their male peers (Welsh, Olson, & Perkins, 2019). They were also at greater risk for both depression and PTSD, regardless of exposure to combat. Both men's and women's mental health was significantly affected by warzone experience and this relationship was partially mediated by unit cohesion. A gender difference occurred related to self-efficacy, in that self-efficacy partially mediated the effect of warzone experiences for women but not for men. Women in both fire departments and military organizations likely experience both overt and covert experiences of

gender-based doubt in their competency, which could be affecting their own sense of self-efficacy. This lowered sense of self-efficacy places them at increased risk for both depression and PTSD.

Importantly, race has been described as intersecting with gender to further complicate women's experiences. Yoder and Aniakudo (1997) found that African American female firefighters experienced stereotypes of themselves as "beasts of burden" and "welfare recipients" and were in turn given more chores and expected to carry heavier physical loads. In follow up research conducted by Yoder and Berendsen (2001), this was contrasted by findings that White women were stereotyped as fragile and weak, requiring paternalistic overprotection (Martin, 1994; Yoder, Adams, and Prince, 1983). This paternalistic overprotection is evident in interactions where male firefighters attempt to take heavy loads from female firefighters or not allowing them to make entry into a burning structure. This attitude is encapsulated in one fire chief's statement to a female firefighter, as reported in Yoder and Berendsen's (2001) research: "Now you girls might be important and stuff, and you take care of us in the station, and we'll take care of you out there on the streets."

Perhaps not surprisingly, female firefighters face an increased risk of being targets of sexual harassment. This includes incidences from their male peers and supervisors, as well as the civilians they interact with. A 1991 nationwide survey showed that over half of all female firefighters reported experiencing sexual harassment (Rosell et al., 1995). This trend was reiterated in a 2008 survey conducted by the International Association of Women in Fire and Emergency Services, which found that 42.9% of female firefighters reported instances of verbal harassment. Recently, the President of the International Fire Chief's Association acknowledged continuing difficulties (Metcalf, 2014). In his open letter, he asserts that, in general, the fire service is neither diverse, nor inclusive. He goes on to say, "In a surprisingly large number of fire departments, we're

even a profession where it's OK to harass and physically assault women and minorities – even rape women – in our fire stations."

Research has shown that women in traditional male jobs experience sexual harassment more than women in gender-congruent occupations (Plat, Frings-Dresen, & Sluiter, 2011). This may be due, in part, to male resentment towards their presence, which is disruptive to the existing male environment. Sexual harassment has been suggested to stem from power and control issues and is used to reassert masculinity and reclaim power from women who encroach on culturally-masculine territory (Rosell et al., 1995). The resentment as well as power and control issues from firefighters is apparent in results from Rosell et al.'s study that showed over a third of fire departments received resistance from personnel to trainings on sexual harassment, privacy, and hazing that were offered prior to hiring female firefighters. Additionally, 48% of fire departments in the study reported receiving complaints from the wives of male firefighters.

Gutek and Morasch (1982) explain sexual harassment as a "spillover" of sex-roles into the workplace and the result of the token status of women when they are few in number. As tokens, they are seen as symbols rather than individuals, and are therefore treated as women first, and co-workers second. This results in frequent experiences with sexual stereotyping and increases in stress attributed to work relations (Rosell et al., 1995). Female firefighters may be especially prone to this as their presence serves as a gender threat and therefore increases stereotypical masculine behaviors, which could include sexual harassment. The high risk for sexual harassment associated with being a female firefighter is yet another reason that they may feel less accepted by and supported by both their organization and their peers.

Experiences of frequent sexism may also contribute to potential PTSD vulnerability for female firefighters. Berg (2006) explored the relationship between everyday (non-violent) sexism

and PTSD in a sample of suburban New York women and found a moderately strong relationship. The author conceptualized sexist discrimination as "the occurrence of gender-specific negative life events or gender-specific stressors" and assessed experiences of sexism utilizing two self-report questionnaires, the Gender-Related Stress Stressors Questionnaire (GRS) and the Sexist Schedule of Events (SSE). Trauma symptom frequency data was obtained using the Trauma Symptom Inventory (TSI: Briere, 1995). Data analysis indicated recent sexist degradation was the most predictive factor for PTSD, accounting for 20% of the variance in PTSD scores. This underlines the potential mental health consequences of day-to-day experiences of sexism.

Women in the Police Service

Women in police departments have faced similar prejudices, stereotyping, discrimination, and harassment from both peers and supervisors (Brown & Grovel, 1998; Franklin, 2005; Hassell & Brandl, 2009; Haarr & Morash, 2013; Morash, Haarr, & Kwak, 2006; Rabe-Hemp, 2008, 2009; Seklecki & Paynich, 2007). Due to these factors, female police officers experience reduced social support at work and increased work-related stress (Davis, 1984; Fry & Greenfield, 1980; Greene & del Carmen, 2002; Morash & Haarr, 1995; Thompson, Kirk, & Brown, 2006; Worden, 1993).

Research conducted by Maguen, Meztler, McCaslin, Inslicht, Henn-Haase, et al. (2009) explored the relationship between PTSD and routine work stress. They hypothesized female officers would have higher rates of PTSD due to increased work stress (i.e. sexual harassment, gender discrimination, and negative social interactions). Their hypothesis was not supported. The authors theorized that the lack of gender differences could be due to organizational policies that have reduced the unequal treatment of women. Another explanation could be that the women have been socialized to male norms within the police department and are therefore less likely to report experiencing helplessness or fear (Lilly, Pole, Best, Metzler, & Marmar, 2009).

Women in the Military Service

Women in the military appear to face similar bias within their hyper-masculine environment. For example, research has found evidence of negative attitudes towards women at the US Military Academy at West Point (Priest et al., 1978; Prince et al., 1978). Male peers rated women has having less leadership potential than males, although supervisor ratings of performance showed no gender difference. Negative attitudes towards women, as perceived by women and reported by men, were also found at the US Air Force Academy (DeFleur & Gillman, 1978). In addition, men in integrated units at both West Point and the Air Force Academy felt that they were treated more harshly and unfairly, and reported less unit solidarity and cohesiveness, than men in all-male units. These negative attitudes towards women have direct and detrimental effects, as evidenced by women reporting feeling less accepted than their male counterparts (DeFleur & Gillman, 1978).

Craig and Jacobs (1895) explained the reactions of men towards women in military organizations as due to three factors: women being assigned gender-congruent roles and responsibilities, competitive context of interactions, and social structure of the organizations, namely that the "introduction of women affected the maleness and traditions of the academy." This suggests that negative behaviors and attitudes that women face from men in male-dominated fields can be conceptualized as resulting from construction of gender and their perceptions of gender threats. In pursuit of masculinity and maintenance of the gendered order, they engage in behaviors that reassert their dominance of and superiority to women.

Women in the military experience sexual harassment at a rate of 24-60% and sexual assault at a rate of 21–25% (Skinner, Kress, Frayne, Tripp, Hankin, Miller & Sullivan, 2000). Lehavot and Simpson (2014) explored experiences of discrimination of women veterans through an

anonymous online survey. The women were asked to complete the Discriminatory Experiences subscale of Women's Wartime Stressor Scale (WWSS; Wolfe, Brown, Furey, & Levin, 1993). This subscale allows the respondents to report the extent to which they experienced harassment (verbal, physical, or sexual), unwanted sexual experiences, isolation due to gender, and discrimination due to gender during their military careers. The results indicated that there was a positive relationship between WWSS scores and both PTSD and depression, suggesting that social discrimination significantly and negatively affects mental health.

Due to the strong malevolent environment women in the military face, it is logical that PTSD prevalence rates would differ from that of their male peers. Previous research with Vietnam veterans found that a malevolent work environment was a stronger predictor of PTSD than traditional combat, perceived threat, or atrocities committed by research participants (King, King, Gudanowski, & Vreven, 1995). Surprisingly, a meta-analysis by Brewin et al. (2000) did not provide any evidence for a gender difference in PTSD symptom severity among military samples.

The absence of a gender differences in Brewin et al.'s (2000) meta-analysis may be partially explained by socialization factors. The women may have adapted to the strong male norms present in their environment and therefore may hesitant to disclose feelings of fear or helplessness on self-report measures (Lilly et al., 2009). Existing researching supports that women in male-dominated professions tend to develop stronger adherence to male norms of attitude and behavior (Marsden & Kalleberg, 1993).

Chapter Three: Methodology

PROCEDURE

In order to test the hypotheses delineated in Chapter One, data were collected from two large Texas municipal fire departments. Potential participants were identified through the individual departments and an email invite was distributed to all currently employed female firefighters within each department. The email included information about confidentiality, consent, and voluntary participation, as well as a link to complete a Qualtrics online survey. The Qualtrics survey included a battery of measures submitted by various researchers as part of a larger, collaborative study between multiple organizations and researchers. Participants were compensated for their effort through inclusion in drawings for prizes collected by a team of researchers. Inclusion requirements for this study were limited to identification as a woman and completion of their firefighter training period (graduation from probationary firefighter rank).

INSTRUMENTS

Demographic measure

A general demographic questionnaire was formed through consensus of a team of researchers collecting this data as part of a larger study.

Trauma Symptom Severity

The Posttraumatic Stress Disorder Checklist 5 (PCL-5) was administered to assess the presence and severity of PTSD symptoms. The PCL-5 is a 20-item self-report measure created by the U.S. Department of Veterans Affairs' National Center for PTSD. Items correspond with

symptoms of PTSD delineated by the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition* (DSM-5). This measure is an updated version of the PCL used in previous research (i.e. Del Ben et al., 2006), which was based off diagnostic criteria from the previous edition of the *Diagnostic and Statistical Manual of Mental Disorders.* Each item is rated on a scale of 0 to 4, from "not at all" to "extremely" bothersome, resulting in a total score ranging from zero to 80. Prevalence of a PTSD symptom is defined as an item on the PCL-5 being scored a 2 or more (PTSD Checklist for DSM-5, 2014). Symptom cluster severity scores may be obtained for each subscale (i.e. Intrusion Symptoms, Persistent Avoidance, Negative Alterations in Cognitions, and Increased Arousal) by adding the response scores for items in each cluster (Weathers et al., 2013). A total symptom severity score can be derived by create a sum score of the twenty responses on the PCL-5. The total symptom severity score was utilized in the present study.

The PCL-5 has also shown comparable diagnostic utility with two accepted measures of PTSD diagnosis, an adaptation of the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) and the Primary Care Posttraumatic Stress Disorder Screen (PC-PTSD; Prins et al., 2004). Temporal stability of the PCL-5 was established in a longitudinal study conducted by Keane, Rubin, Lachowicz, Brief, Enggasser, Roy and Rosenbloom (2014).

Perceived Social Support

Perceived social support (PSS) in the workplace was assessed using a self-report measure developed by Ducharme and Martin (2000). It is one of few measures investigating functional social support within the workplace. The scale contains a total of ten items rated on a five-point scale. The PSS has demonstrated a two-factor structure, which includes affective support and instrumental support (Ducharme & Martin, 2000). The affective support scale has a Cronbach's alpha of .85 and the instrumental support scale has an alpha of .76. The two scales are moderately

correlated ($r = .65$, $p < .01$). A total score of perceived social support in the workplace has been utilized in the current study, reflecting the total affective and instrumental support. Using a total support score is relatively common with similar measures containing both affective and instrumental support items and scales (Armstrong, Shakespeare-Finch, & Shochet, 2014; Ducharme, Knudsen, and Roman, 2008; Sloan, Newhouse, Thompson, 2013). Social support is often conceptualized as a broad framework of varieties of support (i.e. affective/emotional, instrumental/functional, informational, etc.) and assessed utilizing a total score (Cohen, Mermelstein, Kamarck, & Hoberman, 1985).

Conformity to Masculine Norms

The Conformity to Masculine Norms Inventory-46 (CMNI-46; Parent & Moradi, 2009) was utilized to measure how female firefighters self-report conformity or nonconformity to masculine gender role norms. This measure contains forty-six items rated on a four-point scale. The CMNI-46 is comprised of nine subscales: Winning; Emotional Control; Risk-Taking; Violence; Power Over Women; Playboy; Self-Reliance; Primacy of Work; and Heterosexual Self-Presentation.

Psychometric analysis supports the use of the CMNI-46 in measuring masculinity and adherence to masculine norms. Evidence of its divergent validity has been demonstrated with potentially overlapping dimensions of personality and self-esteem (Parent, Moradi, Rummell & Tokar, 2011). CMNI-46 subscales were found to correlate with both convergent and discriminant validity indicators, and Cronbach's alphas for each of the subscales ranged from .78 to .89 (median .82), indicating high levels of internal consistency reliability (Parent & Moradi, 2011). Total scale reliabilities have been assessed as good ($\alpha = .88$, Parent & Moradi, 2009) and excellent ($\alpha = .90$, Levant & Wimer, 2014). Although the construct of conformity to masculine norms is

multidimensional and the total score is not the preferred method of assessment, Parent et al. (2011) acknowledge the use of the total scale score in various research projects. This study does not attempt to draw hypotheses regarding individual subscales, limiting the need for use of individual subscales in the current study.

Depression

Depressive symptomology was assessed utilizing the Center for Epidemiologic Studies Depression Scale (CES-D, Radloff, 1997). This self-report measure contains 20 items related to the participant's experiences during the past week (i.e. "I felt that I could not shake off the blues even with help from my family or friends.") Participants respond using a 4-point scale ranging from "Rarely or none of the time (less than 1 day)" to "Most or all of the time (5-7 days)." A total score was created from the sum of the variables, after appropriate reverse coding. Reliability for the CES-D has been documented across categories of race, gender, and age (Knight, Williams, McGee & Olaman, 1997; Radloff, 1977; Roberts, Vernon, & Rhoades, 1989). High internal consistency, with Cronbach's alpha coefficients ranging from .85 to .90 across studies, has been reported as well as significant support for concurrent and construct validity (Radloff, 1977).

Open-Ended Question

Participants were offered the opportunity to respond to the question "Based on your experiences as a firefighter, what are important issues that female firefighters face?" This question was designed to provide participants unstructured space to speak about their gendered experiences as a firefighter. This qualitative data will allow for a deeper understanding of issues female firefighters experience, without the limitations of predetermined response categories. The open-ended nature of the question provides the opportunity for the researchers to assess what is most

relevant to the participants in terms of their experiences as female firefighters and may provide directions for future research with this population.

DESCRIPTIVE INFORMATION ABOUT MEASURED VARIABLES

The study sample was comprised of seventy-six female career firefighters (N = 76) from two Southwestern municipal fire departments. Fifty-one participants are currently employed at a fire department performing both fire suppression and emergency medical services, while twenty-five participants are employed at fire department which only performs fire suppression services. Age of participants ranged from 25 to 57 (*M*= 40.22, *SD*= 8.64). Regarding race, participants identified as White/Caucasian (77.6%), Black/African American (10.5%), Asian (2.6%), American Indian/Alaska Native (1.3%), and Other (2.6%). Participants identified their ethnicities as "Not Hispanic or Latino" (68.4%), "Hispanic or Latino" (17.1%), or "Other" (9.2%). The participants identified their sexual orientations as heterosexual (76.3%), lesbian (14.5%), bisexual (2.6%), and other (1.3%). Participants reported their marital status as married (43.4%), divorced (19.7%), or never married (31.6%). Twelve women (15.8%) indicated their romantic partners are also employed as firefighters.

Participants reported being employed as a firefighter for an average of 14.29 years, ranging from less than 1 to 28 years. They endorsed a variety of educational backgrounds: high school diploma or equivalent (2.6%), some undergraduate college (21.1%), associate's degree (14.5%), bachelor's degree (50.0%), and master's degree (6.6%). Twelve participants (15.8%) endorsed they have been employed as a paramedic. Four participants endorsed previous active duty military service, with one participant endorsing having served in a combat or war zone and exposure to dead, dying or wounded people during military service. Thirty-one of the participants (40.8%) indicated they have received previous mental health counseling/treatment.

Means, standard deviations, and Cronbach's alphas were calculated for measures used in the study and are presented in Table 1. No Cronbach's alpha is reported for the PCL-5, as it does not rely on internal consistently to establish reliability. Each of the measures demonstrated adequate reliability values that were comparable to those reported in the literature.

Measure	*M*	*SD*	Cronbach's α
Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5)	15.69	14.13	n/a
Perceived Social Support Scale	39.24	8.58	Affective Subscale= .948 Instrumental Subscale= .865
Conformity to Masculine Norms Inventory – 46 (CMNI-46)	42.62	9.86	.825
Center for Epidemiologic Studies Depression Scale (CES-D)	13.43	10.7	.917

Table 1. Means, standard deviations, and Cronbach's α for measures in the current study.

MISSING DATA

In order to assess for patterns in the missing data, a yes/no variable was created reflecting full completion of the CMNI-46. The CMNI-46 was chosen due to its placement at the end of the battery. Completion of the measure was not significantly correlated with demographic variables, the PCL-5, or the PSS. Missing Value Analysis in SPSS found no evidence for patterns in the

missing data. Multiple imputation was performed at the subscale level for the CMNI-46 to account for missing data, likely due to testing fatigue as this measure was late in the battery. No cases were excluded from analysis.

DATA ANALYSIS

Regression-based analysis was utilized to investigate the hypothesis that Perceived Social Support (PSS) mediates the effect of Conformity to Masculine Norms (CMN) on Trauma Symptom Severity (TSS). A high portion of the sample identified as lesbian, bisexual, or other (23.7%). Heterosexual self-presentation operates differently for men than for women, as homosexuality may be deemed more masculinity-conforming for women in contrast to masculinity-challenging for men (Keiller, 2010). As heterosexual self-presentation is not likely an important component of masculine gender role conformity for women, this scale was excluded from the sum score of the CMNI-46 items used for analysis. To test the mediated relationship posited in Hypothesis 1, we used the PROCESS macro Version 3 developed by Hayes (2017). Model 4, the simple mediation model, was used to determine if PSS mediated the effect of CMN on TSS (see Figure 1). The Hayes PROCESS macro tests indirect effects and is preferred as a more accurate test of mediation than the traditional Baron and Kenny (1986) method (Hayes, 2013). We used 5000 bootstrapped sampling to generate 95% confidence intervals.

Results supported that the indirect effect of CMN on TSS via PSS was significant (β = -.132, *SE* = .061, 95% CI = - .266, - .026). In terms of the components of the model, the association between CMN and PSS was significant (β = .224, *SE* = .093, p = .019). The second component of the model was the association between CMN, PSS, and TSS. The entire model was significant (R^2 = .16, F (2,73) = 6.91, p = .002). PSS was significantly associated with TSS (β = - .588, *SE* = .174,

p = .001). However, there was no direct relationship between CMN and TSS (β = - .083, *SE* = .145, p = .567).

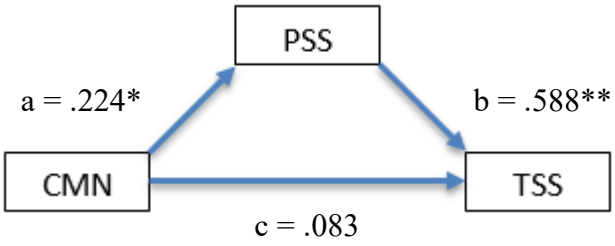

Figure 2. Mediated model depicting a, b, and c paths. CMN = conformity to masculine norms, PSS = perceived social support, and TSS = trauma symptom severity.

Depressive symptoms (DS), as assessed by the CES-D, were added as a covariate to the overall mediated model to account for previously described relationships between depression, perceptions of social support, masculine gender role conformity, and trauma symptoms. The correlation matrix for the four variables is provided below in Table 2. Data indicated CES-D scores have a strong positive relationship with both trauma symptom severity and a strong negative relationship with perceived social support. When we conducted this analysis using Hayes PROCESS macro model 4, using DS as a covariate, the model remained significant but only DS was associated with PSS or TSS, and the indirect effect of CMN on TSS via PSS was no longer significant (β = - .022, *SE* = .148, 95% CI = - .1039, .0481). In terms of the components of the model, the association between CMN and PSS was not significant (β = .134, *SE* = .107, p = .216). The association between DS and PSS was significant (β = - .308, *SE* = .112, p = .008). The second component of the model was the association between CMN, PSS, DS and TSS. The entire model was significant (R^2 = .38, F (3,49) = 10.04, p < .000). TSS was not significantly associated with

PSS (β = - .163, *SE* = .197, *p* = .411) or CMI (β = .033, *SE* = .151, *p* = .827). DS was significantly associated with TSS (β = .757, *SE* = .168, *p* = .000). The association between depressive symptom scores and trauma scores was very strong (β = .81, *SE* = .16 , *p* < .001), and was sufficient to nullify the effects of other variables in the model.

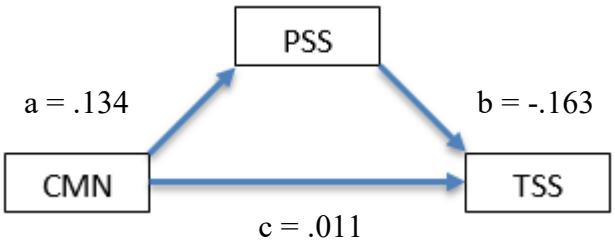

Figure 3. Mediated model depicting a, b, and c paths after including depression scores from the Center for Epidemiologic Studies Depression Scale (CES-D) as a covariate. CMN = conformity to masculine norms, PSS = perceived social support, and TSS = trauma symptom severity.

Measure	PCL-5	PSS	CMNI-46	CES-D
PCL-5		-.391	-.080	.610
		$p = .006$	$p = .303$	$p < .001$
PSS	-.391		.039	-.604
	$p = .006$		$p = .418$	$p < .001$
CMNI-46	-.080	.039		-.228
	$p = .303$	$p = .418$		$p = .147$
CES-D	.610	.604	-.228	
	$p < .001$	$p < .001$	$p = .147$	

Table 2. Correlation matrix with *p* values for the four measures in the current study.

Hypothesis 2 was assessed through a series of t-tests comparing this sample to normative samples in previous research (Smiler, 2006; Parent & Smiler, 2013). Results indicate Hypothesis 2 is supported (see Table 3 below). In comparing to Smiler's 2006 data, women in the current student endorsed significantly more conformity to masculine norms overall, t (103) = 3.556, p = .0006, d = 0.701. The current sample also scored significantly higher ($p < .01$) on subscales of Emotional Control, Winning, Violence, and Self-Reliance. Compared to the women from Parent and Smiler's (2013) research, the participants from this study indicated higher endorsement of Emotional Control, Winning, Violence, Self-Reliance, and Power Over Women. The female firefighters in the current study showed significantly less endorsement of the Heterosexual Self-Presentation subscale than the women from both of the comparison groups ($p < .0001$).

CMNI-46 Scale			Compared to Smiler (2006)				Compared to Parent & Smiler (2013)			
	M	*SD*	*M*	*SD*	*t*	*d*	*M*	*SD*	*t*	*d*
Emotional Control	1.492	.532	1.05	.45	*t* (102) = 5.459**	1.081	1.11	.54	*t* (376) = 4.377**	0.451
Winning	1.398	.545	1.29	.42	*t* (103) = 3.275**	0.645	1.23	.42	*t* (377) = 2.398*	0.247
Playboy	.824	.725	.72	.46	*t* (103) = 0.124	0.024	.72	.54	*t* (377) = 1.149	0.118
Violence	1.611	.636	1.29	.49	*t* (101) = 5.639**	1.122	1.36	.55	*t* (375) = 2.739**	0.282
Self-Reliance	1.454	.626	1.03	.57	*t* (103) = 4.721**	0.930	1.12	.54	*t* (377) = 3.790**	0.390
Risk-Taking	1.314	.479	1.53	.34	*t* (103) = 0.696	0.137	1.24	.45	*t* (377) = 1.012	0.104
Power Over Women	.855	.437	.71	.35	*t* (102) = 0.884	0.175	.51	.41	*t* (376) = 5.151**	0.531
Primacy of Work	1.028	.581	1.14	.38	*t* (103) = 0.248	0.049	1.00	.43	*t* (377) = 0.394	0.041
Heterosexual Self-Presentation	.899	.674	1.38	.47	*t* (102) = 4.378**	0.867	1.31	.56	*t* (376) = 4.418**	0.456
Total Scale	42.62	9.86	1.18	.21	*t* (103) = 3.556**	0.701	*N/A*	*N/A*	*N/A*	*N/A*

Table 3. T-scores and Cohen's *d* representing differences in Conformity to Masculine Norms Inventory – 46 (CMNI-46) scores between previous samples and the current study's sample of female firefighters.

Forty-eight women responded to the open-ended question. The most common theme reported by participants was not being seen as equal and experiencing gender-based discrimination or bias (60.4%). Women also identified sex-based differences in physical strength as a common issue they women must overcome (14.6%). Women also shared frustration with leadership (14.6%), sexual harassment (12.5%), and childcare (12.5%). Participants indicated that the facilities, such as locker rooms, can be problematically divided (4.2%). Three women noted that a

primary issue women face is the need to “toughen up,” either by not getting offended by men’s behaviors of by standing up for themselves when they feel boundaries have been crossed.

Chapter Four: Discussion

The results from this study offer mixed support for the mediated model. Research Objective 1 explored the relationships between conformity to masculine gender role norms, trauma symptom severity, and perceived social support. No significant relationship was found between conformity to masculine gender norms and trauma symptom severity. The lack of direct relationship can be best understood through the absence of the many other variables likely affecting this relationship. It is also plausible that some gender norms may inhibit the development of trauma symptoms, while others may exacerbate trauma symptoms. In a post-hoc analysis exploring this possibility, the emotional control subscale scores of the CMNI-46 were correlated with both perceived social support (negative relationship) and trauma symptom severity (positive relationship), offering support for this theory. PCL scores were also relatively low, indicating that female firefighters may be hesitant to disclose symptoms. This could also inhibit the discovery of meaningful statistical relationships.

As expected, conformity to masculine gender norms was significantly and positively related to perceived social support. This supports the argument that women who report conforming more to masculine norms feel more accepted and supported by their peers than do their female peers who indicate lower conformity to masculine norms. The more masculine gender conforming women may pose less of a threat to the masculinized environment and to the "male-ness" of the occupation. It is reasonable to assert that these women are not perceived as threats by their peers, so they do not face the brunt of behaviors meant to distance from femininity. As a result, they receive more support. Furthermore, this study supported the hypothesis that perceived social support is negatively and significantly related to trauma symptom severity. As expected, women who reported perceiving more social support indicated less trauma symptom severity that their

peers with lower perceived social support. This is consistent with a broad field of research supporting the importance of social support as a preventative factor in the development trauma symptomology.

Hypothesis 1, the overall mediated model, was supported by the original analysis. Perceived social support mediated the relationship between conformity to masculine norms and trauma symptom severity, indicating that women who endorse more conformity to masculine gender roles norms perceive higher levels of social support at work. This social support, in turn, is correlated with reduced trauma symptom severity. When depressive symptoms were added into the model as a covariate, the strength of the correlation between depressive symptoms and trauma symptoms negated the effects of the overall model. These findings are consistent with the understanding of depression and PTSD frequently occurring comorbidly, as well as research showing that PTSD may lead to the development of depression symptoms over time. These results highlight the importance of assessing for and treating both PTSD and depression in clinical work with female firefighters, and improving availability of social support within their environment as a protective measure for mental health.

The results from this study provide strong support for Hypothesis 2, demonstrating female firefighters varied significantly in conformity to masculine norms from women in two previous normative data samples. Female firefighters were significantly more conforming to masculine norms overall. Specifically, the firefighters scored significantly higher than both previous samples on Emotional Control, Winning, Violence, and Heterosexual Self-Presentation subscales. This supports Craig and Jacob's (1985) assertion that women who are firefighters are less traditional, which is reflected in comfort or willingness to engage in masculine-typed activities or careers. Just as men who join the fire department tend to be more conforming to masculine norms than their

peers in the community (Mahalik et al., 2006), the same appears to be true for women. Craig and Jacob's (1985) finding that more traditional men tend to evaluate female firefighters lower highlights a potential conflict between female firefighters. If female firefighters also conform more strongly to masculine norms, as was supported in the current study, then they may also have the potential to have bias against their fellow female firefighters. This infighting and distancing from/devaluing of femininity can be seen in previous research, such as the "bitchy" femininity described in Ainsworth et al.'s research (2014). Distancing from or devaluing other female firefighters was also evident in the open-ended responses of participants. When asked what issues women in the fire department faced, several participants expressed negative attitudes towards women:

> "… Women need to toughen up mentally and not get so offended by everything the guys at work say. Women need to understand at the end of the day this will always be a male dominated career (as its should be) and we need to adapt in our best way to deal with that everyday."
>
> "know your job, don't expect a handout due to being a female"
>
> "Need to have thick skin. Men most of the time have no idea what falls out of their mouth"

One participant explicitly noted that discrimination occurs from both men *and* women in the department. Women may be inadvertently judging and ostracizing other women within the fire service in a similar fashion as they experience from the men, further enforcing the masculine norms of the environment and limiting potential sources of support.

The open-ended question also resulted in feedback regarding more policy-directed difficulties women faced in their work. 12.5% of respondents indicated difficulty related to raising children. These concerns primarily reflected dissatisfaction with policies regarding pregnancy,

childcare, and breastfeeding. Two women also addressed their unusual work environment, which often requires sharing locker rooms, restrooms, and sleeping areas with their male coworkers. In some stations, the disparity in facilities may accentuate the sense of women being guests in a default-male environment or encroaching on male space. If women being given access to male facilities, such as restrooms, is seen as a challenge to the male-dominated environment, it may be detrimental to women who face the brunt of men's behaviors aimed at enforcing and protecting fragile masculinity.

Overall, the results from this study indicate that increasing social support for women in the fire service would benefit their well-being, specifically in regard to trauma and depression symptoms. Changes are possible at various levels within the fire service. Without "calling out" women specifically, information can be provided to cadets in training academies about the importance of social support from fellow firefighters. As the fire service is often considered a family, it may be beneficial to encourage this value within the fire department, and make sure the family is expanded to include both brothers and sisters. Female firefighters may also benefit from formal support groups sponsored by individual departments or informal peer-led groups organized by experienced or veteran women in the fire service. Women may benefit from being connected with supportive resources, such as the International Association of Women in Fire & Emergency Service (Women in Fire). Women may also feel more supported as more women are promoted into leadership roles and as policies change related to issues brought forth in participant's qualitative responses, such as childcare and designation of facilities.

The most effective way to improve women's mental health within the fire department would likely be to remove the negative gendered experiences affecting their perceptions of belongingness and support. Although there are broad social movements towards gender equality,

and fire departments have policies in place against sexual harassment and gender discrimination, the fire department remains a challenge specifically due to the highly-gendered nature of the environment. As we experience broad cultural transitions regarding social roles and gender norms, women who chose to enter the fire service will have to work with, and within, the gendered environment while it evolves in their presence.

LIMITATIONS AND FUTURE DIRECTIONS

Results from this study should be interpreted with several limitations in mind. First, the sample in this study was restricted to two large municipal fire departments in the Southwest region. Attitudes towards women in the fire service may vary significantly for departments in smaller cities or towns, volunteer departments, rural departments, wildland fire departments, or departments in different regions. Women may also feel different levels of acceptance based on their specific roles at the station. Some fire departments also respond to medical calls, running ambulances staffed by both paramedics and EMTs. One woman in the current study noted that women are more accepted within the medical side of services than they are in the fire suppression:

> "The most challenging issue is bias against women in a male dominated field. Especially on the suppression side. Nobody really cares about EMS or other support areas but the red trucks are definitely fueled by testosterone."

Women may feel more support and belongingness when they are in roles perceived as gender-congruent. In the firehouse, this may result in women who attend to medical calls feeling more supported by male peers, while women in suppression may feel a deeper sense of otherness. Women who engage in medical calls may also experience heightened self-efficacy in a role that is gender-congruent and supported by male peers, in comparison to women who serve in more masculine-typed aspects of the fire service, such as fire suppression. The effect of specific roles

within the fire department was not assessed in the current study but would be valuable information to seek in future research.

Much of the research investigating trauma and depression in firefighters focuses on data which is collected primarily from men. This suggests that some of the evidence collected about broad firefighter experiences may not relate to the specific experiences for women. For example, as discussed previously, a large number of firefighters join the fire service with previous military warzone and other traumatic experiences. Previous experiences may account for a large portion of the trauma reactions experienced by male firefighters, while their female peers are less likely to share similar experiences. In the current study, only one participant identified previous war-zone experience, which could be expected in a sample of women as women have only recently been allowed to serve in combat roles in the United States military. These differences in experiences before becoming firefighters may play a large role in the differences between men's and women's experiences once they become peers in the fire department and reflect the need for research specific to women in the fire service.

Until recently, trauma exposure questionnaires did not allow respondents to indicate if the trauma exposure occurred as part of their job. The addition of the "Part of my job" response category to the Life Events Checklist 5 (LEC-5; Weathers, Blake, Schnurr, Kaloupek, Marx, & Keane, 2013) allows for a more thorough understanding of trauma exposure for individuals in high-risk jobs. In measuring trauma experiences, it is critical to capture not only what has happened directly to the firefighters, but also what they have been exposed to in terms of the experiences of others. The LEC-5 was included in the larger, broader battery of tests utilized in the collaborative data collection. The results indicate high endorsement to trauma experiences as part of employment, with women in the study indicating exposure to natural disasters (65.8%), fires or

explosions (78.9%), transportation accidents (72.4%), sudden accidental deaths (69.7%), sudden violent deaths (69.7%), severe human suffering (59.2%), assaults with a weapon (56.6%), and sexual assaults (47.4%).

Male and female firefighters may experience different trajectories of social support. Rehehr et al. (2003) found that firefighter's perceptions of social support lessen over time in their sample of Toronto firefighters. Female firefighters may not experience this same trajectory, considering that they may face increased isolation and rejection early on from their male peers. They may potentially increase support and connectedness over time as they are accepted by their peers and the institution of firefighting as a whole. Increased understanding of development and maintenance of social support amongst female firefighters would likely offer their field pivotal insights into potential areas for improved policies and support. It may also elucidate gendered differences in how female and male firefighters perceive and utilize various sources of social support (i.e. friends, family, colleagues).

This study was also limited by sample size. As women make up a small percentage of firefighters, it is difficult to collect large data samples. Institutional barriers to data collection also exist when collecting through the fire department. Future studies may benefit from collaboration across departments or collecting data through local and national organizations who communicate with and support female firefighters. Additionally, testing fatigue appeared to affect data collection. Shorter test batteries may be useful in future studies seeking more in depth rather than broad information regarding female firefighters and their experiences.

As previously noted, trauma symptoms scores among this sample were relatively low. This may reflect a hesitancy to disclose suffering or perceived weakness. This would be consistent with both masculine gender role conformity as well as cultural norms within the fire department. To

better assess symptomology, as well as rates of Post-Traumatic Stress Disorder, within the population, future researchers may benefit from utilization of standardized diagnostic interviews. Additionally, criteria used by the DSM-V and the measures in this study used to assess depression and PTSD are subjective (Bowman, 1999). The participant's responses to the measures can be influenced by purposeful deception or levels of self-awareness of the participant. There may exist significant differences between self-reports of distress and objective measures of actual harm. Building trust and rapport with participants on a more individual level may be crucial for this population and research questions, given the various pressures they may be facing to appear strong or fit in within their department and worries about privacy.

Overall, this research highlights the need for further, detailed, and frequent research with female firefighters. In a rapidly changing social environment, these women are on the front lines of battles for equal opportunities. As their population grows in size, it will be critical to continue assessing the unique mental health and social needs of women in the fire department.

Appendices

APPENDIX A: POSTTRAUMATIC STRESS DISORDER CHECKLIST – DSM 5 (PCL-5)

INSTRUCTIONS: Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then choose one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:

	Not at all (0)	A little bit (1)	Moderately (2)	Quite a bit (3)	Extremely (4)
Repeated, disturbing, and unwanted memories of the stressful experience?	○	○	○	○	○
Repeated, disturbing dreams of the stressful experience?	○	○	○	○	○
Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	○	○	○	○	○
Feeling very upset when something reminded you of the stressful experience?	○	○	○	○	○
Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	○	○	○	○	○
Avoiding memories, thoughts, or feelings related to the stressful experience?	○	○	○	○	○
Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	○	○	○	○	○
Trouble remembering important parts of the stressful experience?	○	○	○	○	○
Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	○	○	○	○	○
Blaming yourself or someone else for the stressful experience or what happened after it?	○	○	○	○	○
Having strong negative feelings such as fear, horror, anger, guilt, or shame?	○	○	○	○	○
Loss of interest in activities that you used to enjoy?	○	○	○	○	○
Feeling distant or cut off from other people?	○	○	○	○	○
Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	○	○	○	○	○
Irritable behavior, angry outbursts, or acting aggressively?	○	○	○	○	○
Taking too many risks or doing things that could cause you harm?	○	○	○	○	○
Being “superalert” or watchful or on guard?	○	○	○	○	○
Feeling jumpy or easily startled?	○	○	○	○	○
Having difficulty concentrating?	○	○	○	○	○
Trouble falling or staying asleep?	○	○	○	○	○

APPENDIX B: CONFORMITY TO MASCULINE NORMS INVENTORY – 46 (CMNI-46)

INSTRUCTIONS: Thinking about your own actions, feelings and beliefs, please indicate how much you personally agree or disagree with each statement. There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings, and beliefs. It is best if you respond with your first impression when answering.

INSTRUCTIONS: Please carefully complete the following questions.

	Strongly Disagree	Disagree	Agree	Strongly agree
In general, I will do anything to win.	○	○	○	○
If I could, I would frequently change sexual partners.	○	○	○	○
I hate asking for help.	○	○	○	○
I believe that violence is never justified.	○	○	○	○
Being thought of as gay is not a bad thing.	○	○	○	○
In general, I do not like risky situations.	○	○	○	○
Winning is not my first priority.	○	○	○	○
I enjoy taking risks.	○	○	○	○
I am disgusted by any kind of violence.	○	○	○	○
I ask for help when I need it.	○	○	○	○
My work is the most important part of my life.	○	○	○	○
I would only have sex if I was in a committed relationship.	○	○	○	○
I bring up my feelings when talking to others.	○	○	○	○
I would be furious if someone thought I was gay.	○	○	○	○
I don't mind losing.	○	○	○	○
I take risks.	○	○	○	○
It would not bother me at all if someone thought I was gay.	○	○	○	○
I never share my feelings.	○	○	○	○
Sometimes violent action is necessary.	○	○	○	○
In general, I control the women in my life.	○	○	○	○
I would feel good if I had many sexual partners.	○	○	○	○
It is important for me to win.	○	○	○	○
I don't like giving all my attention to work.	○	○	○	○
It would be awful if people thought I was gay.	○	○	○	○
I like to talk about my feelings.	○	○	○	○
I never ask for help.	○	○	○	○
More often than not, losing does not bother me.	○	○	○	○
I frequently put myself in risky situations.	○	○	○	○
Women should be subservient to men.	○	○	○	○
I am willing to get into a physical fight if necessary.	○	○	○	○
I feel good when work is my first priority.	○	○	○	○
I tend to keep my feelings to myself.	○	○	○	○
Winning is not important to me.	○	○	○	○
Violence is almost never justified.	○	○	○	○
I am happiest when I'm risking danger.	○	○	○	○
It would be enjoyable to date more than one person at a time.	○	○	○	○
I would feel uncomfortable if someone thought I was gay.	○	○	○	○
I am not ashamed to ask for help.	○	○	○	○
Work comes first.	○	○	○	○
I tend to share my feelings.	○	○	○	○
No matter what the situation, I would never act violently.	○	○	○	○
Things tend to be better when men are in charge.	○	○	○	○
It bothers me when I have to ask for help.	○	○	○	○
I love it when men are in charge of women.	○	○	○	○
I hate it when people ask me to talk about my feelings.	○	○	○	○
I try to avoid being perceived as gay.	○	○	○	○

APPENDIX C. SOCIAL SUPPORT MEASURE

Please rate the following items on a scale of 1 (Strongly Disagree) to 5 (Strongly Agree)

ITEM	Strongly Disagree		Neutral		Strongly Agree
My coworkers really care about me.	1	2	3	4	5
I feel close to my coworkers.	1	2	3	4	5
My coworkers take a personal interest in me.	1	2	3	4	5
I feel appreciated by my coworkers.	1	2	3	4	5
My coworkers are friendly to me.	1	2	3	4	5
My coworkers would fill in while I'm absent.	1	2	3	4	5
My coworkers are helpful in getting the job done.	1	2	3	4	5
My coworkers give useful advice on job problems.	1	2	3	4	5
My coworkers assist with unusual work problems.	1	2	3	4	5
My coworkers will pitch in and help.	1	2	3	4	5

APPENDIX D. CENTER FOR EPIDEMIOLOGICAL STUDIES DEPRESSION SCALE (CES-D)

INSTRUCTIONS: Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week.

During the past week:

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)
I was bothered by things that usually don't bother me.	○	○	○	○
I did not feel like eating; my appetite was poor.	○	○	○	○
I felt that I could not shake off the blues even with help from my family or friends.	○	○	○	○
I felt that I was just as good as other people.	○	○	○	○
I had trouble keeping my mind on what I was doing.	○	○	○	○
I felt depressed.	○	○	○	○
I felt that everything I did was an effort.	○	○	○	○
I felt hopeful about the future.	○	○	○	○
I thought my life had been a failure.	○	○	○	○
I felt fearful.	○	○	○	○
My sleep was restless.	○	○	○	○
I was happy.	○	○	○	○
I talked less than usual.	○	○	○	○
I felt lonely.	○	○	○	○
People were unfriendly.	○	○	○	○
I enjoyed life.	○	○	○	○
I had crying spells.	○	○	○	○
I felt sad.	○	○	○	○
I felt that people disliked me.	○	○	○	○
I could not get "going".	○	○	○	○

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